

[CLAIMS]**【Claim 1】**

A bottle cap which is fastened to a bottle body having a mouth with an external thread formed around an 5 outer circumferential surface of the mouth, the bottle cap comprising:

an opening unit inserted into the mouth and open at upper and lower ends thereof, with a cutting unit integrally provided in a lower portion of the opening unit;

10 an additive storage container comprising a main cap fastened to the mouth through a screw-type engagement, and an additive storage part extending in an axial direction at a position inside the main cap and being inserted into the opening unit, with a recess provided at a lower end of the additive storage part and receiving therein the cutting unit, and a breakable part integrated with the lower end of 15 the additive storage part such that the breakable part is cut by the cutting unit during rotation of the additive storage part, thus discharging an additive from the 20 additive storage part; and

an upper cap which opens or closes an upper end of the additive storage container.

【Claim 2】

The bottle cap according to claim 1, wherein the 25 recess is defined by a breakable wall and a support wall,

and the cutting unit comprises: a cutting blade extending from a pointed front tip to a lower portion of a rear part of the cutting unit; a guide part provided at a side of the cutting blade and reduced in its thickness in a direction 5 from an upper end to a lower end of the guide part; and a pressure part having constant thickness provided at a rear end of the guide part and integrally coupled to the opening unit by a coupling piece.

【Claim 3】

10 The bottle cap according to claim 2, wherein the additive storage container comprises a projection which interferes with the pressure part of the cutting unit at a predetermined position.

【Claim 4】

15 The bottle cap according to claim 3, wherein the projection is formed in a range extending from the support wall of the recess to a predetermined position which is angularly spaced apart from the support wall at an angle of about 30 - 60 degrees, with an inclined surface provided at 20 a start end of the projection.

【Claim 5】

A bottle cap which is fastened to a bottle body having a mouth with an external thread formed around an

outer circumferential surface of the mouth, the bottle cap comprising:

an opening unit inserted into the mouth and provided with a receiving chamber in an upper portion thereof;

5 an additive storage container assembled with the opening unit at a position outside the opening unit and operated in conjunction with the opening unit to discharge an additive into the bottle body; and

10 separation means for controlling rotation of the additive storage container relative to the opening unit, thus allowing the opening unit to be removed from the bottle body when the additive storage container is removed from the bottle body.

【Claim 6】

15 The bottle cap according to claim 5, wherein the opening unit is provided with the receiving chamber which has a cylindrical shape, the receiving chamber having an open upper end, a lower end provided with a discharge port, and a breaking unit protruding upward in an axial direction 20 from the lower end of the receiving chamber; and

the additive storage container comprises: an end plate placed on the open upper end of the receiving chamber; a main cap extending in an axial direction from an outer circumferential edge of the end plate and being provided with 25 an internal thread which engages with the external thread of

the mouth through a screw-type engagement; and a slider extending in an axial direction from an inner circumferential edge of the end plate and being movably inserted into the receiving chamber of the opening unit such that the slider 5 can be moved in the chamber in an axial direction, the slider being hermetically closed at a lower end thereof by a breakable part which is broken by the breaking unit.

【Claim 7】

The bottle cap according to claim 5, wherein the 10 opening unit is provided with the receiving chamber which has a cylindrical shape, the receiving chamber having an open upper end and a lower end provided with a discharge port; and

the additive storage container comprises: an end plate 15 placed on the open upper end of the receiving chamber; a main cap extending in an axial direction from an outer circumferential edge of the end plate and being provided with an internal thread which engages with the external thread of the mouth through a screw-type engagement; and a slider 20 extending in an axial direction from an inner circumferential edge of the end plate and being movably inserted into the receiving chamber of the opening unit such that the slider can be moved in the chamber in an axial direction, with a discharge opening formed at a lower end of the slider such 25 that the discharge opening communicates with the discharge

port at a predetermined position.

【Claim 8】

The bottle cap according to claim 5, wherein the separation means comprises: an inside spiral ratchet formed around a sidewall of the receiving chamber at a position close to an open upper end of the receiving chamber by extending outward in a radial direction; and an outside spiral ratchet formed on an inner surface of the main cap at a position above the internal thread by extending inward in a radial direction so that the outside spiral ratchet interferes with the inside spiral ratchet.

【Claim 9】

The bottle cap according to any one of claims 6 through 8, wherein a locking ring is coupled to a lower end 15 of the main cap with a breakable line provided between the locking ring and the main cap, the locking ring being restricted from moving downward by an upper surface of a support ring which is formed around the outer circumferential surface of a lower portion of the mouth.

20 **【Claim 10】**

The bottle cap according to claim 9, wherein an annular space is defined between the locking ring and the outer circumferential surface of the mouth, thus allowing the

main cap to be inserted into the annular space.

[Claim 11]

A bottle cap which is fastened to a bottle body having a mouth with an external thread formed around an 5 outer circumferential surface of the mouth, the bottle cap comprising:

a cylindrical opening unit opened at upper and lower ends thereof, with a locking protrusion protruding inward in a radial direction from the upper end of the opening 10 unit, and first and second cutting blades extending upward from the lower end of the opening unit at diametrically opposite positions, the opening unit being inserted into the mouth such that the opening unit can move in an axial direction, but is restricted from rotating in a 15 predetermined direction; and

an additive storage container comprising: an outer cap extending in an axial direction from an outer circumferential edge of an end plate and being fastened to the mouth through a screw-type engagement; an additive storage part extending 20 in an axial direction at a position inside the outer cap, with a locking protrusion provided around an outer circumferential surface of the additive storage part and engaging with the locking protrusion of the opening unit; and an additive isolating plate which extends along a central 25 axis of the end plate and is placed across a diameter of the

additive storage part and which acts as a partition wall.

【Claim 12】

The bottle cap according to claim 11, wherein the additive isolating plate is configured as an independent 5 element which is fitted into a fitting groove formed on the end plate.

【Claim 13】

The bottle cap according to claim 11 or 12, wherein an inclined slot is formed on an upper end of the mouth, and a 10 flange extends outward in a radial direction from an outer circumferential surface of the opening unit at a predetermined position, with a fitting protrusion axially protruding from a lower surface of the flange and fitted into the inclined slot, thus restricting the opening unit from 15 rotating in the predetermined direction.

【Claim 14】

A bottle cap which is fastened to a bottle body having a mouth with an external thread formed around an outer circumferential surface of the mouth, the bottle cap 20 comprising:

an additive storage container which is operated in conjunction with an opening unit inserted into the mouth, thus discharging an additive into the bottle body; and

separation means for controlling rotation of the additive storage container relative to the opening unit, thus allowing the opening unit to be removed from the bottle body when the additive storage container is removed
5 from the bottle body, wherein

the opening unit is open at an upper end thereof, with a conical breaking unit projecting upward along a central axis from a lower end of the opening unit, a pointed pin axially extending upward from a peak of the conical breaking
10 unit, a plurality of cutting blades extending on a conical surface of the breaking unit such that the cutting blades extend from the peak to a lower end of the breaking unit and form a pattern like umbrella ribs, and a plurality of discharge openings formed on the conical surface of the
15 breaking unit at positions between the cutting blades; and

the additive storage container comprises: an end plate placed on an open end of a sidewall of a receiving chamber of the opening unit; a main cap extending in an axial direction from an outer circumferential edge of the
20 end plate and being provided with an internal thread which engages with the external thread of the mouth through a screw-type engagement; an additive storage part acting as a slider extending in an axial direction from an inner circumferential edge of the end plate and being axially and
25 movably inserted into the receiving chamber, the additive storage part being hermetically closed at a lower end

thereof by a breakable part which is pierced by the pointed pin and then cut by the cutting blades.